



Alternative and Renewable Fuel and Vehicle Technology Program

Advisory Committee Meeting

February 10, 2012

California Energy Commission
Hearing Room A



Meeting Agenda

- 9:00 Introductions and Opening Remarks
- 9:20 Program Status Update
- 9:40 2012-2013 Investment Plan – Staff Draft
- 10:00 Advisory Committee Discussion
- 11:15 Public Comment



Program Status Update

Jim McKinney
Office Manager



Program Status Update

- Now in 4th year of 7.5-year duration
- To date, Energy Commission has allocated \$362 million to funding categories, and awarded \$207.3 million among 110 projects
- Current emphases:
 - Overseeing projects funded from first series of solicitations
 - Executing final awards from first series
 - Issuing second series of solicitations



Summary of Major Award Types

- Alternative Fuel Production (\$51 million)
 - Biomethane production: 9 projects (\$35.3 million)
 - Diesel substitutes production: 5 projects (\$4.3 million)
 - Gasoline substitutes production: 6 projects (\$11.4 million)
- Alternative Fuel Infrastructure (\$50.1 million)
 - E85: 85 stations (\$5 million)
 - Biodiesel: 3 sites (\$3.9 million)
 - Electric vehicle charging: 4,375 sites (\$17.4 million)
 - Hydrogen: 12 stations (\$18.7 million)
 - Natural gas: 20 stations (\$5.1 million)



Summary of Major Award Types, cont.

- Alternative Fuel Vehicles (\$55.1 million)
 - Advanced medium- and heavy-duty vehicle technology demonstrations: 9 projects (\$17 million)
 - Light-duty electric vehicles: 430 vehicles (\$2.6 million)
 - Medium- and heavy-duty electric vehicles: 155 vehicles (\$4 million)
 - Natural gas vehicles: 1,151 vehicles (\$29.8 million)
 - Propane vehicles: 165 vehicles (\$1.7 million)
- Manufacturing (\$25.9 million)
 - Vehicles and components: 12 projects (\$25.9 million)



Summary of Major Award Types, cont.

- Market and Program Support (\$25.2 million)
 - Development of fuel standards (\$4 million)
 - Biofuel sustainability studies (\$1.5 million)
 - Workforce training and development (\$15.8 million)
 - Electric vehicle readiness: 9 communities (\$1.8 million)
 - Program support (\$2.1 million)



Status of Solicitations

Description	\$ Available	Duration
PEV Regional Readiness	\$2 Million	On-going
Medium- and Heavy-Duty Advanced Vehicle Technology Demonstration	\$16.9 Million	Closed; NOPA expected soon
Evaluation, Measurement and Verification	~\$3 Million	Closed Feb. 9
Biofuels Production Facilities	\$37.7 Million	Closes Feb. 23
Buydown Incentives for Natural Gas and Propane Vehicles	\$12.7 Million	On-going
Advanced Vehicle Technology Manufacturing	\$10 Million	Closes March 9
Alternative Fuels Infrastructure	\$30.3 Million	Closes March 14
Hydrogen Fueling Infrastructure	\$18.7 Million	Closes March 15
TOTAL	\$131.3 Million	



Questions on Program Status?



Staff Draft 2012-13 Investment Plan



Schedule

- Post Staff Draft: January 27
- First Advisory Committee Meeting: February 10
- Post Revised Draft Investment Plan: April 6
- Second Advisory Committee Meeting: April 20
- Adoption by Energy Commission: May 9



Role and Purpose

- First draft of fourth Investment Plan, covering FY 2012-2013
- Basis for FY 2012-2013 solicitations, agreements and other funding opportunities
- \$100 million funding allocation for a portfolio of fuels, technologies, and supporting elements
- First Investment Plan to constitute an “update”
 - AB 1314 (Wieckowski, Chapter 487, Statutes of 2011)
 - Relies on more comprehensive analyses from previous Investment Plans
 - Shorter, more concise allocation of funding, based on previous analyses and new developments



Layout of Investment Plan

- Reorganized to reflect “supply chain,” rather than individual fuel pathways
 - Pathways covered in depth in 2011-2012 Investment Plan
 - Focused on areas of recognized needs
- Several funding allocations remain tentative
 - “Up to...” reflects the need for further input and discussion about the need and appropriateness for these allocations
 - Amounts serve as benchmarks for possible funding
 - Not all amounts listed as tentative in the Investment Plan can be fully funded (>\$100 million)



Biofuel Production and Supply

- Combined previously separate allocations for diesel substitutes, gasoline substitutes, and biomethane.
 - Fund the best projects, regardless of fuel type
 - Continue to emphasize low-carbon and waste-based feedstocks
 - Particular interest in fuels that can utilize existing infrastructure and vehicle stock
- \$20 million total allocation
 - Similar to previous years' combined funding levels
- Backfill current solicitation?
 - PON-11-601 includes the option to add \$30 million, in addition to previous years' funding
 - Backfill funding will not be committed until 2012-2013 Investment Plan is approved



Biofuel Production and Supply, cont.

- Beyond production capacity, how will we ensure demand?
 - Co-location of biofuel production and demand
 - Blending requirements
 - Impact of LCFS, RFS2, other policies/regulations
 - Federal tax credit changes
 - Programs to provide long-term price visibility to producers



PEV Charging Infrastructure

- \$7.5 million allocated
- Similar to previous year's funding level
- PEVs expected to double by 2013; 100,000's by 2020
- At home, overnight charging remains first priority
- Growing interest in workplace and fleet charging
- Early experiences with other charging installations will help assess need for additional funding
 - Pilot projects in Bay Area study charging in multi-unit dwellings
 - Fast charging installations in Bay Area and San Diego
- Some areas have not had public charger installations



Hydrogen Fueling Infrastructure

- \$11 million allocated
- Rapid increase in volume of FCVs anticipated in 2015-2017
- Stations paired with anticipated vehicle deployment
- Allocation will help reach anticipated needs of 38-50 stations in key locations in time for commercial launch
 - Previously existing: 6
 - Added by ARB: 5 new
 - Added by CEC's first hydrogen PON: 8 new (3 upgraded)
 - Range of CEC's second hydrogen PON (\$18.7 million): 12-18 new
 - Total: 31-37 stations
- Remain open to multi-use stations
- Clean Fuels Outlet regulation and on-going multi-stakeholder discussions



E85 Fueling Infrastructure

- Tentative allocation: up to \$2.5 million
- Gradual rise in retail stations, FFVs, and E85 sales over past few years
- On average, E85 has been 5-20 percent more expensive than gasoline on an energy-equivalent basis
 - End of 38 cent per gallon federal tax credit in 2012
 - Uncertainty of benefitting from LCFS credits
- Slow build-out of previously funded stations, plus an additional \$10.1 million committed to E85 station installations
- Reviewing and seeking input on further funding



Natural Gas Fueling Infrastructure

- Tentative allocation: up to \$2.5 million
- \$5.1 million funded to date for 20 new or upgraded stations
- Additional \$9.6 million available in upcoming solicitation
- Slow but steady installation of previously funded stations
- Stakeholders emphasize need for further focus on increasing vehicle deployment, rather than expanding infrastructure



Propane Fueling Infrastructure

- Tentative allocation: up to \$1 million
- Relatively low cost alternative fuel option
- *2011-2012 Investment Plan* allocated \$500,000 to expand infrastructure
 - Special emphasis on school fleets and rural Northern California
- Need for additional funding?



Natural Gas Vehicles

- \$12 million allocated
- On-going interest demonstrated through vehicle buydown program
 - First round of funding provided \$14.8 million toward 769 vehicles, primarily toward medium- and heavy-duty applications
 - Reservations went quickly; claims continue to be filed
 - Second round of funding provides \$6.4 million for natural gas vehicles, and can be increased to add \$30 million (for natural gas and propane)
- Continued interest in how to improve the buydown program
 - Incentive levels
 - Vehicle types



Propane Vehicles

- Tentative allocation: up to \$4 million
- Similar experience to natural gas vehicles in vehicle buydown program
 - Reservations have been slower
- Seeking further information on propane vehicles' market potential and GHG emission reduction potential



Light-Duty PEVs

- Tentative allocation: up to \$5 million
- Goals: encourage early consumer familiarity and increase PEV production volumes
- ARB's Clean Vehicle Rebate Program (CVRP)
 - Provided \$16 million toward more than 4,800 vehicles so far
 - As PEV offerings grow, demand for incentives will grow, and may exceed available CVRP funding before Summer 2012
 - ARB has halved per-vehicle incentive level, and is continuing to explore an appropriate incentive level
 - Additional funding from AQIP's FY 2012-2013 Funding Plan may still be insufficient; subject of future AQIP working group meetings



Medium- and Heavy-Duty Advanced Technology Vehicles (Demonstration)

- Tentative allocation: up to \$3 million
- PIER-funded work at CalHEAT research center
- Eight projects funded from first solicitation, demonstrating a variety of different technologies
- Additional projects will follow from second solicitation (\$16.9 million)
- Previously funded projects are still in early phases, with no firm measurements of successful commercialization (yet)
- Energy Commission seeks input on need and appropriateness of additional funding in FY 2012-2013



Medium- and Heavy-Duty Advanced Technology Vehicles (Deployment)

- Tentative allocation: up to \$4 million
- Steady increase in deployment of medium- and heavy-duty hybrid electric, hybrid hydraulic, and all-electric vehicles.
- Hybrid Truck and Bus Voucher Incentive Project (HVIP)
 - Funded by ARB, administered by CALSTART
 - Provides incentives for all of the above
 - Incentive is insufficient to significantly defray all-electric vehicle cost
 - Previously, Energy Commission provided \$4 million to increase the incentives for 155 all-electric
- Energy Commission seeks input on whether and how to continue support for medium- and heavy-duty all-electric vehicles



Emerging Opportunities

- \$1.5 million allocated
- Reserved for previously unanticipated opportunities
- Difficult to develop competitive solicitations
 - Opportunities can be tough to foresee
 - Opportunities are often time-constrained
 - Opportunities may be unique, and cannot be compared



Manufacturing

- \$20 million allocated
- Significant funding reflects previously unmet demand, and emphasis on in-state economic development
- PON-11-604 written to allow for funding supplement of up to \$35 million
 - At Energy Commission's discretion, some or all of the FY 2012-2013 funding could go toward this solicitation
 - Opportunity to quickly release funds for the solicitation's highest quality projects



Workforce Training and Development

- \$2.5 million allocated
- On-going partnerships with EDD and ETP
- \$2 million for workforce training delivery via ETP
 - Based on estimate of upcoming demand
- \$250,000 for workforce needs assessment of clean transportation industry
- \$250,000 to expand a pilot project that develops career paths for new industry entrants



Market and Program Development

- Sustainability studies: tentative allocation up to \$1 million
 - Continuation and expansion of studies to ensure sustainable approaches to in-state biofuel production
 - LCFS Sustainability Working Group and Interagency Forestry Working Group
 - Continuing to assess need for additional funding in this category



Market and Program Development, cont.

- Regional alternative fuel readiness and planning:
\$3 million allocated
 - Very positive reception to PEV regional readiness funding
 - Possible expansion to include hydrogen and natural gas
- Centers for alternative fuels and advanced vehicle technology: tentative allocation up to \$3 million
 - New category
 - Vertical integration of RDD&D processes
 - Can serve as collaborative hubs to promote innovation, seek venture capital and federal cost-sharing, demonstrate new technologies, and provide workforce training



Market and Program Development, cont.

- Technical assistance and analysis: \$2 million allocated
 - On-going need for technological, market, and financing analysis
- Measurement, verification and evaluation: \$500,000 allocated
 - Provide accountability for both individual projects and the ARFVT Program as a whole
 - Will help develop future Benefits Reports



CALIFORNIA ENERGY COMMISSION

Project/Activity		Proposed Funding FY 2012-2013 (Millions)
Alternative Fuel Production	Biofuel Production and Supply	\$20
Alternative Fuel Infrastructure	Electric Charging Infrastructure	\$7.5
	Hydrogen Fueling Infrastructure	\$11
	E85 Fueling Infrastructure	Up to \$2.5
	Natural Gas Fueling Infrastructure	Up to \$2.5
	Propane Fueling Infrastructure	Up to \$1
Alternative Fuel and Advanced Technology Vehicles	Natural Gas Vehicle Incentives	\$12
	Propane Vehicle Incentives	Up to \$4
	Light-Duty PEV Incentives	Up to \$5
	Medium- and Heavy-Duty BEV Incentives	Up to \$4
	Medium- and Heavy-Duty Advanced Vehicle Technology Demonstration	Up to \$3
Emerging Opportunities	Innovative Technologies and Federal Cost-Sharing	\$1.5
Manufacturing	Manufacturing Facilities, Equipment and Working Capital	\$20
Workforce Training and Development	Workforce Training and Development Agreements	\$2.5
Market and Program Development	Sustainability Studies	Up to \$1
	Regional Alternative Fuel Readiness and Planning	\$3
	Centers for Alternative Fuels and Advanced Vehicles	Up to \$3
	Technical Assistance and Analysis	\$2
	Measurement, Verification and Evaluation	\$0.5
Total Available		\$100